



AC-100

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: Morgan Kanflod et al : Examiner: Victor L. MacArthur

Mark: Coupling Sleeve For :
Connection Of A Threaded :
Rock Bolt To An Impact :
Rock Drilling Machine :

Serial No. 10/539, 148 :

Filed: June 16, 2005 :

I hereby certify that this correspondence is
being deposited with the United States Postal Service
as first class mail in an envelope addressed to
Commissioner for Patents, P.O. Box 1450, Alexandria,
VA 22313-1450, on the date indicated below.

Mark P. Stone 3/8/11
MARK P. STONE (Date of Deposit)
Reg. No. 27,954

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Mail Stop: AF

DECLARATION UNDER 37 C.F.R. SECTION 1.132

Lars Persson, a citizen of Sweden, currently residing at Torngatan 37, Orebro, Sweden,
hereby declares as follows:

I received a Master of Science Degree in Mechanical Engineering from the Institute of
Technology at Linkoping University in 1980.

I have 24 years of experience in research and development of drill rigs, and I have 10
years of experience in research and development of rock drills.

I am currently the Research and Development Manager for Rock Drills for Atlas Copco Rock Drills AB, Orebro, Sweden, the Assignee of the above identified patent application.

I am the primary inventor in the following patent cases: US2009/107727 A1 and WO98/07952 A1.

I have carefully reviewed the above identified US patent application, including the Amendment filed on September 15, 2010 and the Official Action dated November 8, 2010 issued by the U.S. Patent and Trademark Office. In the Official Action, the Patent Examiner has objected to the Specification and to independent claim 1 as presented in the Amendment filed on September 15, 2010, on the grounds that the recitation in independent claim 1, that "...said locking device is loaded to retain the rock drilling machine connected to the coupling sleeve only when said rock bolt is disconnected from said coupling sleeve..." on the grounds that this recitation is not supported by the original Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

In my opinion, based upon my review of the disclosure of this patent application, as originally filed, I respectfully disagree with the Examiner's conclusion that the aforementioned

recitation in independent claim 1 would not be recognized or understood by persons skilled in the relevant art at the time the patent application was filed.

The recitation that the "... locking device is loaded to retain the rock drilling machine connected to the coupling sleeve..." can only be reasonably interpreted, in my opinion, to mean that the rock drilling machine is "locked" to the coupling sleeve. The term "loaded", as used in the Specification, will be understood to be equivalent to the term "locked", while the term "unloaded", as used in the Specification, will be understood to be equivalent to the term "unlocked". My reasons for these conclusions are discussed as follows.

The Specification states that "... During drilling the locking device 7 is unloaded. ..." (Page 2, second paragraph, lines 3-4). Therefore, during a drilling operation, the rock drilling machine (2) and the rock bolt (1) are connected to the coupling sleeve by their respective threaded portions.

The Specification further states that "... After drilling the rock bolt 1 is to be separated from the coupling sleeve and left in the rock. Hereby the rock drilling machine is rotated for loosening of the thread connection. Through collaboration between the locking device 7 and region 8 which has a smaller diameter than the thread of the shank adapter it is prevented that the rock drilling machine and the coupling sleeve are separated ..." (Page 2, last paragraph, lines 4-8). The Specification also states that "...The locking device 7 cooperates with a region 8 in

order to prevent that the coupling sleeve and the rock drilling machine 2 are separated. ...”

(Page 2, first paragraph, lines 8-10).

Based upon my educational background and professional experience, it is my opinion that a person of ordinary skill in the relevant art, namely rock drills and rock drilling, will immediately understand from the disclosure of this patent application, as originally filed, that the locking device is unlocked (unloaded) during a percussion operation so that the rock drilling machine is not locked to the coupling sleeve, and the locking device is loaded (locked) to lock the drilling machine to the coupling sleeve when the drilling machine is rotated in a direction for disconnecting the rock bolt from the coupling sleeve. In my opinion, this is the only reasonably interpretation of the original Specification because 1). A person of ordinary skill in the relevant art will understand that it is undesirable to have the locking device loaded (locked) to lock the rock drilling machine to the coupling sleeve during a percussion operation because the locking device would interfere with the transmission of the shock waves and thereby decrease the efficiency of the percussion operation, and 2). A person of ordinary skill in the relevant art will recognize that the locking device must be loaded (locked) to lock the rock drilling machine to the coupling sleeve when the rock drilling machine is rotated in a direction to separate the rock bolt from the coupling sleeve because otherwise the rock drilling machine itself would become separated from the coupling sleeve when rotated in a direction to separate the rock bolt from the coupling sleeve thereby preventing the desired separation of the rock bolt from the coupling sleeve.

Since maintaining the locking device in an unloaded position during percussion drilling, and maintaining the locking device in a loaded position only when the drilling machine is rotated in a direction to separate the rock bolt from the coupling sleeve when no percussion operation is being performed is the only reasonable manner in which the coupling sleeve disclosed in the patent application can be utilized, it is my opinion that a person of ordinary skill in the rock drilling art would immediately understand from the original Specification of the above identified patent application that the locking device is loaded to retain the rock drilling machine connected to the coupling sleeve only when the rock bolt is being disconnected from the coupling sleeve by rotation of the rock drilling machine in a direction for disconnecting the coupling sleeve from the rock bolt.

I have also reviewed independent claim 1, as presented in the Amendment filed on September 15, 2010. In my opinion, the scope of the claim is definite and unambiguous, the claim is consistent with the invention as disclosed in the original Specification, and the claim will be understood by persons having ordinary skill in the relevant art.

I further declare that all statements made herein based upon my own knowledge are true, and that all statements made on information and believed to be true, and that these

statements were made with the knowledge willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. Section 1001, and that such willful false statements may jeopardize the validity of this document, the subject patent application, or any patent issuing therefrom.

2011-01-17

Dated
Orebro, Sweden

A handwritten signature in black ink, appearing to read 'Lars Persson', written over a horizontal line.

Lars Persson